



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0479; Product Identifier 2016-NE-23-AD]

RIN 2120-AA64

Airworthiness Directives; Honeywell International Inc. Turboprop and Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2018-02-14, which applies to certain Honeywell International Inc. (Honeywell) TPE331 turboprop and TSE331 turboshift engines. AD 2018-02-14 requires inspection of the affected combustion chamber case assembly, replacement of those assemblies found cracked, and removal of affected assemblies on certain TPE331 and TSE331 engines. Since we issued AD 2018-02-14, we received comments to revise the applicability of that AD to include the TPE331-12B engine model, correct certain TPE engine model typographical errors, and to allow certain weld repair procedures. This proposed AD would expand the applicability of AD 2018-02-14 to include the TPE331-12B engine model, correct certain engine model typographical errors, and allow certain weld repair procedures after approval. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Honeywell International Inc., 111 S 34th Street, Phoenix, AZ 85034-2802; phone: 800-601-3099; Internet: <https://myaerospace.honeywell.com/wps/portal>. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0479; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Joseph Costa, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, CA 90712-4137; phone: 562-627-5246; fax: 562-627-5210; email: joseph.costa@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2018-0479; Product Identifier 2016-NE-23-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We issued AD 2018-02-14, Amendment 39-19167 (83 FR 3263, January 24, 2018), (“AD 2018-02-14”), for certain Honeywell TPE331 turboprop and TSE331 turboshaft engines. AD 2018-02-14 requires inspection of the affected combustion chamber case assembly, replacement of those assemblies found cracked, and removal of affected assemblies on certain TPE331 and TSE331 engines. AD 2018-02-14 resulted from reports that combustion chamber case assemblies have cracked and ruptured. We issued AD 2018-02-14 to prevent failure of the combustion chamber case assembly.

Actions Since AD 2018-02-14 Was Issued

Since we issued AD 2018-02-14, we determined the need to revise sections of that AD. We received comments indicating that the TPE331-12B engine model was inadvertently omitted from that AD and that the TPE331-43-A, -43-BL, -47-A, -55-B, and -61-A engine models included typographical errors. We also received comments to

revise the Compliance section, which disallows weld repairs on any combustion chamber case assemblies that are affected by that AD. We determined that allowing weld repair procedures of certain combustion chamber case assemblies with lower stresses may be accomplished if these procedures are approved by the Manager, Los Angeles ACO Branch.

Related Service Information under 1 CFR part 51

We reviewed Honeywell Service Bulletin (SB) TPE331-72-2178, Revision 0, dated May 3, 2011 and Honeywell SB TPE331-72-2179, Revision 0, dated May 3, 2011. Honeywell SB TPE331-72-2178, Revision 0, describes procedures for inspection and removal of the affected combustion chamber case assemblies installed on all affected engines except for the TPE331-12B engine model. Honeywell SB TPE331-72-2179, Revision 0, describes procedures for inspection and removal of the affected combustion chamber case assemblies installed on the TPE331-12B engine model. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

We reviewed Honeywell SBs TPE331-72-2228, Revision 0, dated June 12, 2014; TPE331-72-2230, Revision 0, dated June 19, 2014; TPE331-72-2218, Revision 2, dated February 18, 2017; TPE331-72-2244, Revision 2, dated March 20 2017; TPE331-72-2235, Revision 2, dated February 18, 2017; TPE331-72-2281, Revision 0, dated July 22, 2016; TPE331-72-2294, Revision 0, dated December 22, 2016; TPE331-72-2231, Revision 1, dated August 1, 2017; and TSE331-72-2245, Revision 0, dated November 11, 2016. These SBs provide guidance on replacement of the affected combustion chamber case assemblies.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain all of the requirements of AD 2018-02-14. This proposed AD would revise the Applicability to include the TPE331-12B engine model and to correct references to the TPE331-43-A, -43-BL, -47-A, -55-B, and -61-A engine models. This proposed AD would also allow weld repair procedures to the applicable combustion chamber case assemblies provided those procedures are approved by the Manager, Los Angeles ACO Branch.

Costs of Compliance

We estimate that this AD affects 5,644 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
On-wing inspection	1 work-hour x \$85 per hour = \$85	\$0	\$85 per inspection	\$479,740 per inspection cycle

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We estimate that 158 engines will need this replacement during the first year of inspection.

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement of the	1 work-hour X \$85	\$15,000	\$15,085

Action	Labor cost	Parts cost	Cost per product
combustion chamber case assembly	per hour = \$85		

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national

Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2018-02-14, Amendment 39-19167 (83 FR 3263, January 24, 2018), and adding the following new AD:

Honeywell International Inc. (Type Certificate previously held by AlliedSignal Inc., Garrett Engine Division; Garrett Turbine Engine Company; and AiResearch Manufacturing Company of Arizona): Docket No. FAA-2018-0479; Product Identifier 2016-NE-23-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2018-02-14, Amendment 39-19167 (83 FR 3263, January 24, 2018).

(c) Applicability

This AD applies to Honeywell International Inc. (Honeywell) TPE331-1, -2, -2UA, -3U, -3UW, -5, -5A, -5AB, -5B, -6, -6A, -8, -10, -10AV, -10GP, -10GT, -10N, -10P, -10R, -10T, -10U, -10UA, -10UF, -10UG, -10UGR, -10UR, and -11U, -12B, -12JR, -12UA, -12UAR, -12UHR, -25AA, -25AB, -25DA, -25DB, -25FA, -43-A, -43-B, -47-A, -55-B, and -61-A turboprop engine models, including those engine models with a -L stamped after the model number (for example, -43-BL); and TSE331-3U turboshaft engine models with combustion chamber case assemblies, part numbers (P/Ns) 869728-x, 893973-x, 3101668-x, and 3102613-x, where “x” denotes any dash number, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7240, Turbine Engine Combustion Section.

(e) Unsafe Condition

This AD was prompted by reports that combustion chamber case assemblies have cracked and ruptured. We are issuing this AD to prevent failure of the combustion chamber case assembly. The unsafe condition, if not addressed, could result in failure of the combustion chamber case assembly, in-flight shutdown, and reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For all affected engines:

(i) Inspect all accessible areas of the combustion chamber case assembly, focusing on the weld joints, before accumulating 450 hours time in service (TIS) since last fuel nozzle inspection or within 50 hours TIS after the effective date of this AD, whichever occurs later.

(ii) Perform the inspection in accordance with the Accomplishment Instructions, paragraphs 3.B.(1) through 3.B.(2), in Honeywell Service Bulletin (SB) TPE331-72-2178, Revision 0, dated May 3, 2011, or SB TPE331-72-2179, Revision 0, dated May 3, 2011, as applicable to the affected engine model.

(iii) Thereafter, repeat this inspection during scheduled fuel nozzle inspections at intervals not to exceed 450 hours TIS since the last fuel nozzle inspection.

(2) For TPE331-3U, -3UW, -5, -5A, -5AB, -5B, -6, and -6A engine models with combustion chamber case assemblies, P/Ns 869728-1, 869728-3, or 893973-5, installed, and without the one-piece bleed pad with P3 boss; and for TPE331-1, -2, and -2UA engine models modified by National Flight Services, Inc., supplemental type certificate (STC) SE383CH, remove the combustion chamber case assembly from service at the next removal of the combustion chamber case assembly from the engine, not to exceed 3,700 hours TIS since last hot section inspection.

(3) After the effective date of this AD, do not weld repair the applicable combustion chamber case assemblies unless the weld repair procedures are approved by the Manager, Los Angeles ACO Branch, and that approval specifically refers to this AD.

(h) Definition

(1) TPE331 engines modified by STC SE383CH may be defined as the “Super 1” and “Super 2” for the compressor modification of the TPE331-1 and the TPE331-2, -2U, and -2UA engine models, respectively.

(2) Figures 1 and 2 to paragraph (h) of this AD illustrate the appearance of combustion chamber case assembly, P/N 893973-5, without and with, respectively, the one-piece bleed pad with the P3 boss.

**Figure 1 to Paragraph (h) of this AD. Combustion Chamber Case Assembly
Without the One-Piece Bleed Pad with P3 Boss**



**Figure 2 to Paragraph (h) of this AD. Combustion Chamber Case Assembly
with One-Piece Bleed Pad with P3 Boss**



(i) Installation Prohibition

After the effective date of this AD, do not install a combustion chamber case assembly, P/N 869728-1, 869728-3, or 893973-5, in TPE331-3U, -3UW, -5, -5A, -5AB, -5B, -6, and -6A engine models or in TPE331-1, -2, and -2UA engine models modified by National Flight Services, Inc., STC SE383CH, unless the combustion chamber case assembly has a one-piece bleed pad with P3 boss.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-REQUESTS@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Joseph Costa, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, CA 90712-4137; phone: 562-627-5246; fax: 562-627-5210; email: joseph.costa@faa.gov.

(2) For service information identified in this AD, contact AD, contact Honeywell International Inc., 111 S 34th Street, Phoenix, AZ 85034-2802; phone: 800-601-3099; Internet: <https://myaerospace.honeywell.com/wps/portal>. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on June 19, 2018.

Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.

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